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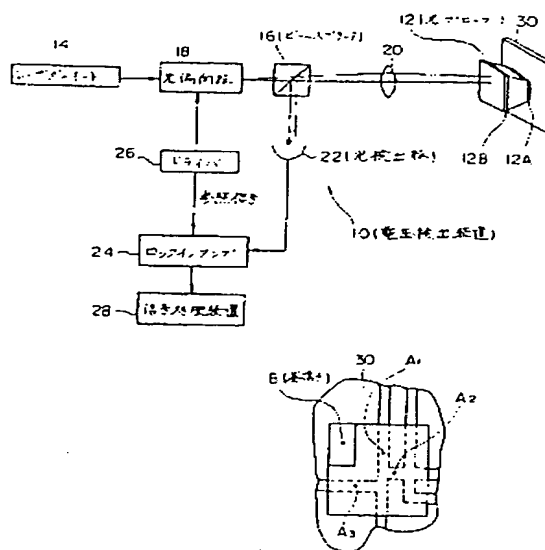
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TITLE : VOLTAGE DETECTOR



ABSTRACT : PURPOSE: To attain an accurate voltage detection without using an electric chopper by providing a light deflector deflecting a light beam alternately between points to be measured and a reference point at the tip of optical probe, and synchronous amplifier amplifying an output of light detector.

CONSTITUTION: The light deflector 18 is interposed between a laser diode 14 and a beam splitter 16, and the photodetector 22 making a photoelectric conversion of a reflected light separated to the side by the splitter 16 is provided. Then, the points A to be measured on an integrated circuit 30 are measured successively. At this time, when the deflector 18 is exerted by a driver 26 thereby the measuring points A and the reference point B are alternately irradiated with the light beam, the light beam is deflected at high speed between both points. A lock-in amplifier 24 is synchronized to a reference signal from the driver 26 to amplify a signal from the detector 22. In this case, no change to the voltage exists on the measuring points A since the electric chopper is not used, and a certain electric field is impressed to the probe 12 but not impressed to the grounded reference point B. By this procedure, a waveform distortion of the signal caused by ON/OFF of the electric signal to be measured is prevented, and the accurate voltage detection can be performed.

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